

WHAT IS CLAIMED IS

1. A method for regulating the permeability of the blood brain barrier comprising administering to a subject a composition comprising a nitric oxide synthase-3 regulating agent in a manner by which the nitric oxide synthase-3 regulating agent is delivered in an effective amount to regulate the permeability of the blood brain barrier.
2. The method in accordance with claim 1 for reducing the increased permeability of the blood brain barrier caused by a pathological condition, wherein the nitric oxide synthase-3 regulating agent is a nitric oxide synthase-3 inhibitor effective for reducing an increased permeability of the blood brain barrier.
3. The method in accordance with claim 2, wherein the nitric oxide synthase-3 inhibitor is an analog of L-arginine.
4. The method in accordance with claim 1, wherein the administering step is to locally administer to a subject a composition comprising a nitric oxide synthase-3 regulating agent in an effective amount to regulate the permeability of the blood brain barrier.
5. The method in accordance with claim 4 for reducing the increased permeability of the blood brain barrier caused by a pathological condition, wherein the nitric oxide synthase-3 regulating agent is a nitric oxide synthase-3 inhibitor effective for reducing an increased permeability of the blood brain barrier.
6. The method in accordance with claim 4 for increasing the permeability of the blood brain barrier, wherein the nitric oxide synthase-3 regulating agent is a nitric oxide synthase-3 activator or nitric oxide donor effective for increasing the permeability of the blood brain barrier.
7. The method in accordance with claim 6, wherein the composition administered further comprises a neurologically active therapeutic compound or a diagnostic compound for delivery into the central nervous system

following an increase in the permeability of the blood brain barrier as effected by the nitric oxide synthase-3 activator or nitric oxide donor.

8. The method in accordance with claim 6, wherein the administering step contemporaneously administers a second composition comprising a neurologically active therapeutic compound or diagnostic compound for delivery into the central nervous system following an increase in the permeability of the blood brain barrier as effected by the nitric oxide synthase-3 activator or nitric oxide donor.

9. The method in accordance with claim 1, wherein the administering step administers to a subject a composition comprising a nitric oxide synthase-3 regulating agent associated with a targeting molecule specific for cells forming the blood brain barrier in an effective amount to regulate the permeability of the blood brain barrier.

10. The method in accordance with claim 9, wherein the targeting molecule is a ligand or an antibody molecule.

11. The method in accordance with claim 9, wherein the cells to which the targeting molecule is specific are brain microvascular endothelial cells.

12. The method in accordance with claim 9, wherein the administering step is systemic administration to a subject.

13. The method in accordance with claim 9 for increasing the permeability of the blood brain barrier, wherein the nitric oxide synthase-3 regulating agent is a nitric oxide synthase-3 activator or nitric oxide donor effective for increasing the permeability of the blood brain barrier.

14. The method in accordance with claim 13, wherein the nitric oxide synthase-3 regulating agent is in association with both a targeting molecule and a neurologically active therapeutic compound for delivery into the central nervous system following an increase in the permeability of the blood brain barrier.

15. The method in accordance with claim 13, wherein the nitric oxide synthase-3 regulating agent is in association with both a targeting molecule and a diagnostic compound for delivery into the central nervous system following an increase in the permeability of the blood brain barrier.